

BACKSTOP® Thermal Expansion Tanks

DIAPHRAGM & BLADDER TYPE THERMAL EXPANSION TANKS

THE BEST PROTECTION FOR THERMAL EXPANSION



Since 1931

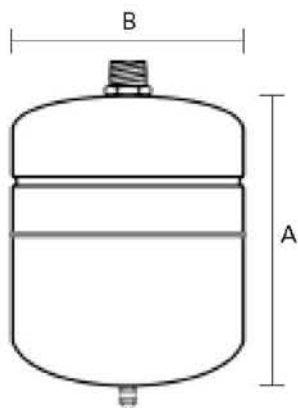
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BACKSTOP® Thermal Expansion Tanks



DIAPHRAGM TYPE THERMAL EXPANSION TANKS

Arrow's A Series **BACKSTOP** System is a residential diaphragm type pre-charged thermal expansion tank designed for the protection of potable hot water systems. The tank is designed for installation between the backflow preventer and the water heater to accept expanded potable hot water, keeping system pressures below relief valve settings. The water is contained in a food grade polypropylene reservoir with a patented butyl rubber diaphragm separating the expanded water from the air cushion.



Models **A 101 A 102**
A 103 A 104

SPECIFICATIONS

| | |
|-----------------------|--------------------------|
| Factory Pre-charge | 35 PSI |
| System Connection | 304 Stainless Steel |
| Diaphragm | Butyl Rubber |
| Liner Material | Food Grade Polypropylene |
| Max. Operating Temp. | 200° F |
| Max. Working Pressure | 150 PSI |

SPECIFICATIONS

| Model No. | Volume Liter | Volume Gallon | A Height | B Diameter | Syst. Conn. | Ship Wt. (lbs) |
|-----------|--------------|---------------|----------|------------|-------------|----------------|
| A 101 | 8 | 2 | 12-1/2" | 8" | 3/4" | 5 |
| A 102 | 18 | 4.5 | 15" | 11" | 3/4" | 9 |
| A 103 | 55 | 14 | 19-7/8" | 15-1/2" | 1" | 19 |
| A 104 | 80 | 20 | 27" | 15-1/2" | 1" | 27 |

Why Choose BACKSTOP?

Without a **BACKSTOP** Thermal Expansion Tank a closed hot water system will quickly over-pressurize resulting in added stress to the various system components. Below are some of the problems that can result:

- Safety valves can fail or wear out quickly
- Valve stems and ball seals can leak
- Wasted BTUs
- Shortened water heater life

Relief valves are safety devices that are not designed to discharge during each cycle of the hot water system. If this cycling occurs, the safety relief valve could collect deposits on the seat, there can be a deterioration of springs, and wear and tear will damage the valve in a short period of time. Failed safety relief valves are hazardous. Thermal expansion can be safely controlled by installing a properly sized expansion tank to accept the expanded water and keep the system pressure safely under the relief valve setting.

HEADQUARTERS: 465 N. Berry St. • Brea, CA 92821 • TEL: 714 674-0590

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BLADDER TYPE THERMAL EXPANSION TANKS

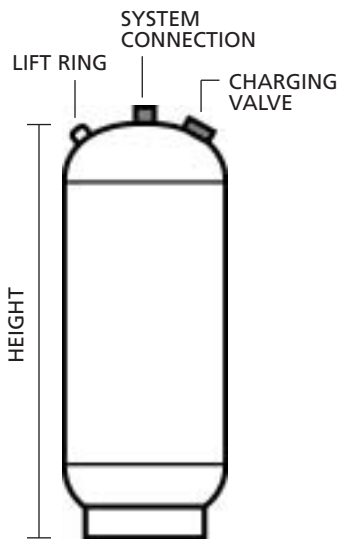
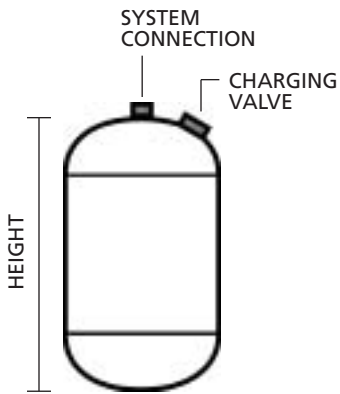
BACKSTOP Type AC thermal expansion tanks are designed for use on potable hot water systems to absorb expanded water and prevent the dangerous buildup of pressure. As the water is heated, thermal expansion occurs and water is forced into the pre-charged thermal tank. The pre-charged air cushion returns water to the system when delivery is required at various fixtures. This arrangement prevents unnecessary relief valve operation, which results in wasted water and energy costs, and eliminates potential internal component damage to water heaters. All AC Backstop thermal tanks come equipped with a heavy duty butyl bladder and stainless steel system connection. Use Backstop thermal tanks for residential, institutional, industrial and commercial applications.



TYPE AC EXPANSION TANKS

ASME fixed bladder expansion tanks for commercial and industrial installations. Space saving tank comes in sizes of 3.5 gallons to 90 gallons.

- ASME Section VIII Construction and Label
- Permanent separation of air and water, never water logs.
- Smaller sizes for easier handling, saves space and installation costs
- Stainless steel system connection
- Can be manifolded for more capacity
- Factory pre-charged at 35 psig and field adjustable



SPECIFICATIONS

| Model No. | System Conn. (in.) | MAWP (PSIG) | Dia (in.) | Height (in.) | Tank Volume (gal.) | Approx. Weight (lbs.) |
|-----------|--------------------|-------------|-----------|--------------|--------------------|-----------------------|
| AC 5 | 3/4 | 150 | 10 | 14 | 3.5 | 22 |
| AC 12 | 3/4 | 150 | 12 | 14 | 5 | 28 |
| AC 20 | 3/4 | 150 | 12 | 20 | 8 | 34 |
| AC 30 | 3/4 | 150 | 16 | 23 | 15 | 64 |
| AC 42 | 1 | 150 | 16 | 32 | 22 | 88 |
| AC 60 | 1 | 150 | 16 | 34 | 25 | 93 |
| AC 80 | 1 | 150 | 16 | 45 | 35 | 109 |
| AC 100 | 1 | 150 | 20 | 38 | 45 | 146 |
| AC 125 | 1 | 150 | 20 | 49 | 60 | 175 |
| AC 160 | 1 | 150 | 24 | 46 | 70 | 259 |
| AC 180 | 1 | 150 | 24 | 49 | 80 | 268 |
| AC 210 | 1 | 150 | 24 | 52 | 90 | 283 |

TYPICAL SPECIFICATIONS Furnish and install as shown on plans a _____ gallon _____ diameter X _____ "(high) pre-charged steel thermal expansion tank with a fixed FDA approved butyl bladder.. The tank shall have a top NPT stainless steel system connection and a .301" - 32 charging valve connection (standard tire valve) to facilitate the on-site charging of the tank to meet system requirements. The tank must be constructed in accordance with Section VIII of the ASME Boiler and Pressure Vessel Code and stamped 150 psi working pressure.

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BACKSTOP® Quick-Sizing Chart

QUICK SIZING CHART FOR NON-ASME MODELS

| SUPPLY PRESSURE (PSIG) | WATER HEATER VOLUME (GAL.) | | | | | | | | |
|------------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 40 | 50 | 60 | 80 | 100 | 120 | 150 | 175 | 200 |
| 40 | A 101 | A 101 | A 101 | A 102 | A 102 | A 102 | A 103 | A 103 | A 103 |
| 50 | A 101 | A 101 | A 101 | A 102 | A 102 | A 102 | A 103 | A 103 | A 103 |
| 60 | A 101 | A 101 | A 102 | A 102 | A 102 | A 102 | A 103 | A 103 | A 103 |
| 70 | A 101 | A 101 | A 102 | A 102 | A 102 | A 102 | A 103 | A 103 | A 103 |
| 80 | A 101 | A 101 | A 102 | A 102 | A 102 | A 103 | A 103 | A 103 | A 103 |
| 90 | A 101 | A 102 | A 102 | A 102 | A 103 | A 103 | A 103 | A 103 | A 103 |
| 100 | A 102 | A 102 | A 102 | A 103 | A 103 | A 103 | A 103 | A 103 | A 103 |
| 110 | A 102 | A 102 | A 103 | A 103 | A 103 | A 103 | A 103 | A 104 | A 104 |
| 120 | A 103 | A 103 | A 103 | A 103 | A 103 | A 103 | A 104 | A 104 | A 104 |

QUICK SIZING CHART FOR ASME MODELS

| SUPPLY PRESSURE (PSIG) | WATER HEATER VOLUME (GAL.) | | | | | | | | |
|------------------------|----------------------------|-------|-------|--------|--------|--------|--------|--------|--------|
| | 120 | 200 | 240 | 300 | 400 | 500 | 600 | 750 | 1000 |
| 40 | AC 5 | AC 12 | AC 20 | AC 30 | AC 42 | AC 42 | AC 60 | AC 60 | AC 100 |
| 50 | AC 5 | AC 20 | AC 20 | AC 30 | AC 42 | AC 42 | AC 60 | AC 60 | AC 100 |
| 60 | AC 20 | AC 20 | AC 20 | AC 30 | AC 42 | AC 42 | AC 60 | AC 60 | AC 100 |
| 70 | AC 20 | AC 20 | AC 30 | AC 30 | AC 42 | AC 42 | AC 60 | AC 60 | AC 100 |
| 80 | AC 20 | AC 20 | AC 30 | AC 30 | AC 42 | AC 60 | AC 60 | AC 100 | AC 100 |
| 90 | AC 20 | AC 30 | AC 30 | AC 42 | AC 42 | AC 60 | AC 60 | AC 100 | AC 100 |
| 100 | AC 20 | AC 30 | AC 42 | AC 42 | AC 100 | AC 100 | AC 100 | AC 100 | AC 100 |
| 110 | AC 20 | AC 30 | AC 42 | AC 42 | AC 100 | AC 160 | AC 160 | AC 160 | AC 180 |
| 120 | AC 20 | AC 30 | AC 42 | AC 100 | AC 100 | AC 160 | AC 180 | AC 180 | AC 180 |

1. Based upon temperature increase from ambient temperature of 40°F to 140°F.
2. For larger sizes or higher temperatures please consult factory.
3. More sizing information available on our web site www.backstop.net

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